Name: Date:

PCW_09_22 Coordinate transformations v5

Question 1

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f[5x+6]-4}{3}$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a,b) \rightarrow \left(\frac{a-6}{5}\;,\;\frac{b-4}{3}\right)$$

Question 2

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f[2\,(x-5)]}{7}-4$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a,b) \rightarrow \left(\frac{a}{2}+5\;,\;\frac{b}{7}-4\right)$$

Question 3

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 6\cdot(f[3\,(x+9)]-7)$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a,b) \rightarrow \left(\frac{a}{3}-9\;,\;6\,(b-7)\right)$$

PCW_09_22 Coordinate transformations v5

Question 4

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f\left[\frac{x-3}{4}\right]}{2} + 5$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(4a + 3 \;,\; \frac{b}{2} + 5\right)$$

Question 5

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 8 \cdot f\left[\frac{x}{6} + 4\right] + 3$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow (6\,(a - 4) \;\;,\;\; 8b + 3)$$

Question 6

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 2 \cdot f[9x - 3] - 7$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(\frac{a + 3}{9} \;,\; 2b - 7\right)$$